Rio Tinto Exploration Pty Limited

EL 5107, EL 7167, EL 7188 and EL 7189 Combined Annual Report for the Year Ending 1/6/01 and Final Report

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ABSTRACT

EL 5107, EL 7167, EL 7188 and EL 7189 (The Nicholson Tenements) were granted to Rio Tinto Exploration Pty. Limited on 2nd June 1999 over a total area of 1342 sub-blocks.

Exploration by Rio Tinto during the reporting period included anthropological and work area clearance surveys, RAB drilling and IP surveys.

It is concluded that there is no near surface, large stratiform Pb-Zn deposit in the Monsoon or Brumby Areas.

It is recommended that no further work be undertaken on the Nicholson tenements. ELs 5107, EL 7167, EL 7188 and EL 7189 will be relinquished.

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Ntd 6830	ELs 5107, 7167, 7188 and 7189 Nicholson Project Location of RAB holes and IP lines	1 : 50 000
NTd 6802	Nicholson Project EL5107 Dipole-Dipole IP - 780000mE	1 : 10 000
NTd6801	Nicholson Project EL5107 Dipole-Dipole IP - 777400mE	1 : 10 000
NTd6800	Nicholson Project EL5107 Dipole-Dipole IP - 776000mE	1 : 10 000
NTd6799	Nicholson Project EL5107 Dipole-Dipole IP - 774000mE	1 : 10 000
NTd6798	Nicholson Project EL5107 Dipole-Dipole IP - 772000mE	1 : 10 000
NTd6797	Nicholson Project EL5107 Dipole-Dipole IP - 770000mE	1 : 10 000
NTd 6864	Monsoon RAB Section 746 000E	1 : 10 000
NTd 6865	Monsoon RAB Section 748 000E	1 : 10 000
NTd 6866	Monsoon RAB Section 750 000E	1 : 10 000
NTd 6867	Monsoon RAB Section 752 000E	1 : 10 000
NTd 6868	Monsoon RAB Section 754 000E	1 : 10 000
NTd 6869	Monsoon RAB Section 755 000E	1 : 10 000
NTd 6870	Monsoon RAB Section 756 000E	1 : 10 000

NTd 6871	Monsoon RAB Section 757 000E	1 : 10 000
NTd 6872	Monsoon RAB Section 758 000E	1 : 10 000
NTd 6873	Monsoon RAB Section 760 000E	1 : 10 000
NTd 6874	Monsoon RAB Section 761 000E	1 : 10 000
NTd 6875	Monsoon RAB Section 762 000E	1 : 10 000
NTd 6876	Monsoon RAB Section 763 000E	1 : 10 000
NTd 6877	Monsoon RAB Section 764 000E	1 : 10 000
NTd 6878	Monsoon RAB Section 766 000E	1 : 10 000
NTd 6879	Monsoon RAB Section 768 000E	1 : 10 000
NTd 6880	Monsoon RAB Section 770 000E	1 : 10 000
NTd 6881	Monsoon RAB Section 771 000E	1 : 10 000
NTd 6882	Monsoon RAB Section 772 000E	1 : 10 000
NTd 6883	Monsoon RAB Section 773 000E	1 : 10 000
NTd 6884	Monsoon RAB Section 774 000E	1 : 10 000
NTd 6885	Monsoon RAB Section 775 000E	1 : 10 000
NTd 6886	Monsoon RAB Section 776 000E	1 : 10 000

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1. INTRODUCTION

ELs 5107, EL 7167, EL 7188 and EL 7189 (The Nicholson Tenements) were granted to Rio Tinto Exploration Pty. Limited on 2nd June 1999. Prior to grant, Rio Tinto Exploration and the Northern Land Council entered into a "Deed for Exploration" for the above licences. This deed was executed on 15 February 1999.

The tenements cover 1342 sub-blocks as shown:

Table 1 – Nicholson Tenement Sub-blocks

EL	Number of Sub-Blocks
5107	154
7167	385
7188	419
7189	384

The tenements were considered prospective for stratiform base metal mineralisation in the McNamara Group and for kimbilitic diamond pipes.

The Nicholson project tenements are situated on the Waanyi-Garawa Aboriginal Land Trust in the Gulf Country of the Northern Territory adjacent to the Northern Territory – Queensland border. Access to the area is by a gravel track linking Mittiebah Station to Murun Murula.

This report details exploration completed on the Nicholson tenements for the period 2 June 2000 to 1 June 2001.

2. CONCLUSIONS AND RECOMMENDATIONS

Exploration completed by Rio Tinto since June 2000 has primarily consisted of the RAB drilling and IP surveying.

It is concluded from RAB drilling that there is no near surface, large stratiform Pb-Zn deposit in the Monsoon Area.

The decoupled phase IP data at Brumby was monotonously low throughout the area suggesting an absence of sulphide-bearing shales.

It is recommended that no further work be undertaken on the Nicholson tenements. ELs 5107, EL 7167, EL 7188 and EL 7189 will be relinquished.

3. GEOLOGY

The Nicholson tenements are located on the Middle Proterozoic Lawn Hill Platform and the Late Proterozoic South Nicholson Basin. In this area, the Murphy Inlier forms the basement (pre 1800 Ma) and consists of the Murphy Metamorphics, intruded by the Nicholson Granite Complex (with co-magmatic volcanics).

The Murhpy Inlier is unconformably overlain by Cover Sequence 2 units consisting of coarse siliclastics, basaltic and felsic volcanics of the Wire Creek Sandstone, Buddawadda Basalt and Peters Creek Volcanics respectively.

The Peters Creek Volcanics are unconformably overlain by the McNamara Group (1600 – 1650 Ma) which consists of clastic sediments of the Musselbrook, Plain Creek and Lawn Hill Formations. Over most of the area the McNamara Group is overlain by the Late Proterozoic South Nicholson Group sediments.

The McNamara Group units are directly comparable to sedimentary packages hosting the McArthur River and Mount Isa deposits (Plain Creek Formation) and Century deposit (Lawn Hill Formation).

4. PREVIOUS EXPLORATION

Exploration completed by Rio Tinto in the first year of tenure consisted of the collection of 336 –20# +40# stream sediment sample and 10 gravel samples. This work concluded that further exploration activity should focus on areas of Lawn Hill Formation beneath shallow colluvial and alluvial cover in the Monsoon and Brumby areas.

Full details of previous exploration by Rio Tinto are presented in the first annual report.

5. EXPLORATION COMPLETED DURING REPORTING PERIOD

Exploration activity completed on the Nicholson tenements during the reporting period consisted of RAB drilling at Monsoon, IP traverses at Brumby and geological reconnaissance in areas with elevated stream sediment geochemistry. Prior to commencement of exploration, general anthropological and specific work area clearances were completed.

5.1 Monsoon Area RAB drilling

The Lawn Hill Formation is the primary target for stratiform Pb-Zn mineralisation in the Nicholson Tenements. At the Monsoon area this formation is mostly recessive and as such forms valleys with shallow Cainozoic cover. The upper unit of the Lawn Hill Formation (the Widalion Sandstone Member) crops out in the northern parts of the Monsoon area.

BMR mapping in the Monsoon area shows that dips of the Plain Creek Formation and the Widalion Sandstone member are between 30 and 55 degrees to the north-northwest. The Monsoon area is therefore amenable to RAB drilling.

A RAB program was undertaken at the Monsoon area to test beneath the Cainozoic cover for elevated base metal geochemistry and suitable host lithologies. Holes were spaced at 400m intervals along traverses that were 2km apart. One Kilometre spaced infill traverses were drilled around significant faults. 93 RAB holes totalling 2850m were drilled.

RAB hole locations are shown on plan Ntd 6830. Drill hole collar details, geological logs and assay results are presented as Appendix 1. Drill sections are presented as plans NTd 6864 to 6886.

Composite samples of drill chips were collected over three metre intervals. Samples were submitted to Amdel Laboratories where they were dried crushed and pulverised to -75µm. Ag, Al, As, Ba, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, S, Sb, Sr, Ti, V, Zn, Zr values were obtained using mixed acid / total digest ICP-OES (method IC3E).

Results from the RAB drilling at Monsoon were disappointing. No significant intervals of shale were intersected. The best results were 6m @ 700ppm Zn in siltstone / fine sandstone from 24m in hole NIC021.

It is concluded that there is no near surface, large stratiform Pb-Zn deposit in the Monsoon area.

5.2 Quality Control

Certified samples were submitted with the Monsoon RAB samples to Amdel Laboratories at approximately one standard per 25 drill samples. The standards consisted of the Cu-Zn-Pb-U-Au certified STD2 and the Zn-Pb-Cd-Ag certified STD4. Ore Research and Exploration Pty Ltd prepared both standards.

Results from certified samples are shown in Appendix 2. Zn and Pb values received from Amdel are plotted against certified values for the standards in tables 1 to 4 in Appendix 3.

STD 4 results for Pb and Zn all fall with the range of +/- 10% of the certified value. For STD 2 several values of Zn and Pb fall outside of the range of +/- 10% of the certified value. These errors with the low grade metal values do not effect the final outcomes of the Monsoon drilling program.

5.3 Geological Reconnaissance and Rock Sampling

Results from the 1999 stream sediment sampling returned elevated metal values (max 145ppm Zn and 175 ppm Pb) in catchments draining the Plain Creek Formation at Brumby and Monsoon. The Plain Creek Formation is described by the BMR as micaceous siltstone and shale with sandstone interbeds. This formation is stratigraphically immediately beneath the Lawn Hill Formation and is thought to be chrono-stratigraphically equivalent to the Riversleigh Siltstone and Mount Les Siltstones of the Lawn Hill Platform in Queensland.

Fourteen rock grab samples were collected during geological reconnaissance in 2000. Sample details and assay results are presented as Appendix 4.

It is concluded that elevated base metal values in streams draining the Plain Creek Formation are most probably related to Fe and Mn scavenging around Neo-Proterozoic and Mesozoic unconformities and paleosurfaces.

5.4 Brumby Area Induced Polarisation Surveying

A 3-person crew from Zonge Engineering was engaged from 24 June to 10 July to read induced polarisation surveys over the Brumby target. A total of 20.6km were covered, based on data acquired at the n=6 transmitter-receiver spacing. The survey coverage is summarised in Table 2, and on plan 6830. Data were read using the Complex Resistivity method in a dipole-dipole configuration to n=6, with a dipole length of 200m and a base frequency of 0.125Hz. A Zonge GDP-32 receiver and Zonge GGT-30 transmitter powered by a trailer-mounted ZMG-30 generator were used.

In order to reduce the effects of wire-to-wire and ground-to-wire coupling on the phase data, a 3-point decoupled phase value was calculated by extrapolating the values at the first, third and fifth harmonics of the fundamental frequency back to zero frequency – ie. the “dc” value of the phase parameter. The 3-point decoupled phase and apparent resistivity data are presented in plans NTd 6797 to NTd 6802.

The apparent resistivity data indicate that the area is moderately conductive, consistent with the presence of porous sedimentary rocks containing groundwater of moderate salinity. The decoupled phase data are monotonously low throughout the area postulated to contain Century-age stratigraphy, suggesting an absence of sulphide-bearing shales. This interpretation is consistent with the results of RAB drilling within the Monsoon target further to the west. The only phase anomalies of note are clearly sourced within the outcropping Musswellbrook Formation rocks. These anomalies were not followed up, due to the fact that the stream sediment geochemical data did not provide any encouragement.

Table 2 – Summary of Induced Polarisation Surveying

Line	From (to n=6)	To (to n=6)	Length
770000mE	7939800mN	7941600mN	1800m
772000mE	7939800mN	7943200mN	3400m
774000mE	7940000mN	7945200mN	5200m
776000mE	7939800mN	7943200mN	3400m
777400mE	7939800mN	7943200mN	3400m
780000mE	7939800mN	7943200mN	3400m

6. REHABILITATION

All RAB holes at Monsoon were plugged and back-filled with drill spoil. Drill pads and access lines were harrowed to encourage natural regrowth of vegetation.

IP pits were filled in after completion of the program.

Graded tracks were left open at the request of the traditional owners.

8. REFERENCES

Sweet, I. P. Carrara Range Region Northern Territory 1:100,000 Geological Map Commentary BMR 1984

Walker, P.J. EL 5107, EL 7167, EL 7188 and EL 7189 Combined Annual Report for the Year Ending 1/6/00

9. LOCATION

Mount Drummond	1 : 250,000 Sheet	SE5312
Mitchiebo	1 : 100,000 Sheet	6360
Benmara	1 : 100,000 Sheet	6361
Carrara	1 : 100,000 Sheet	6460
Cleanskin	1 : 100,000 Sheet	6461

10. KEYWORDS

Proterozoic, Murphy Inlier, South Nicholson Basin, Base Metals, RAB drilling, Geochemistry, IP survey

11. DPO REGISTRY

RAB drilling	88370, 88371, 88372, 88373, 88374, 88375, 88376, 88378, 88379, 88380
Rock grab samples	87526

12. DESCRIPTOR

Final report and Annual report for the year ending June 2001 and final report. RAB drilling and IP of McNamara Group sediments.

Appendix 1

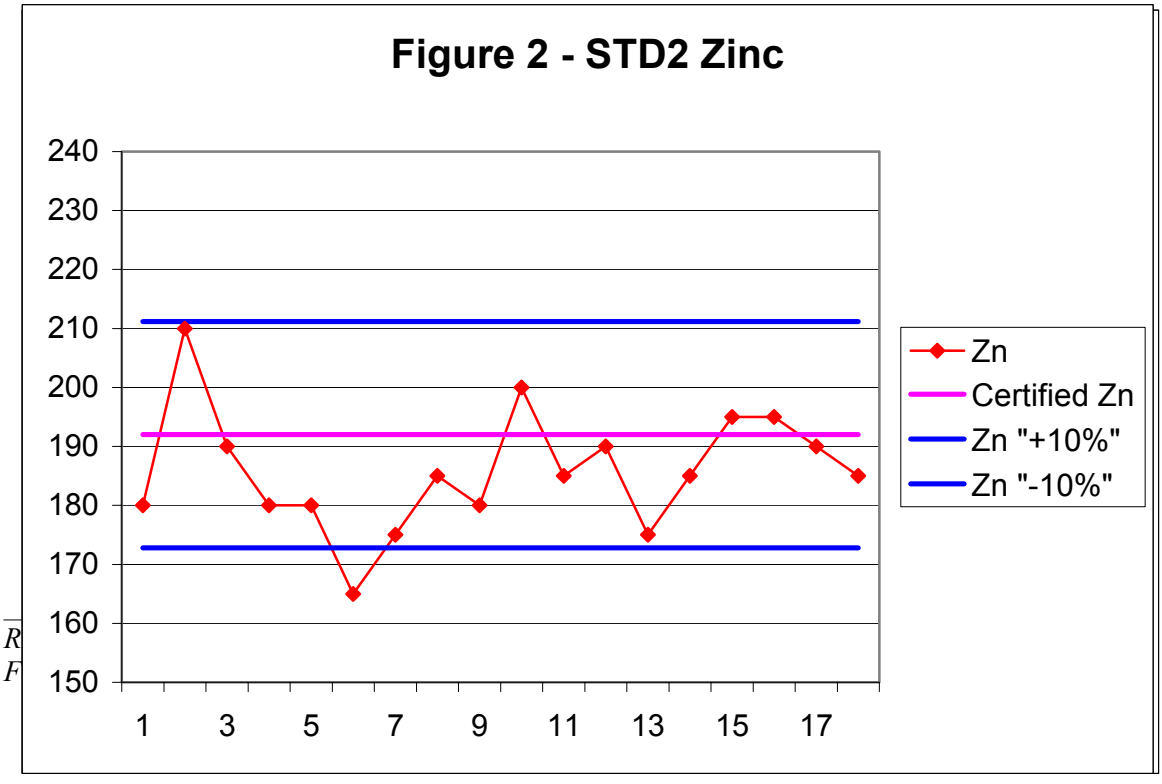
RAB Drill Ledgers and Assay Results

Appendix 2

Quality Control Data

Appendix 3

Quality Control Graphs



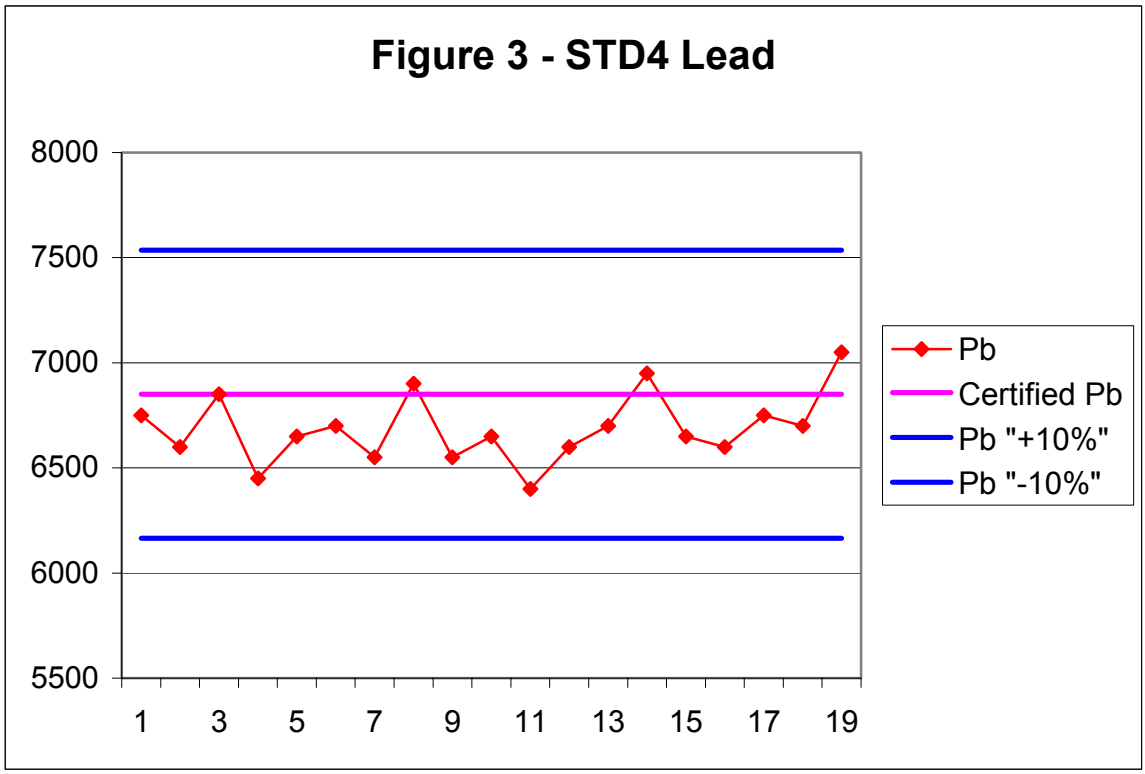


Figure 3 - STD4 Lead
8000
7500
7000
6500
6000
5500
1
3
5
7
9
11
13
15
17
19
Pb
Certified Pb
Pb "+10%"
Pb "-10%"

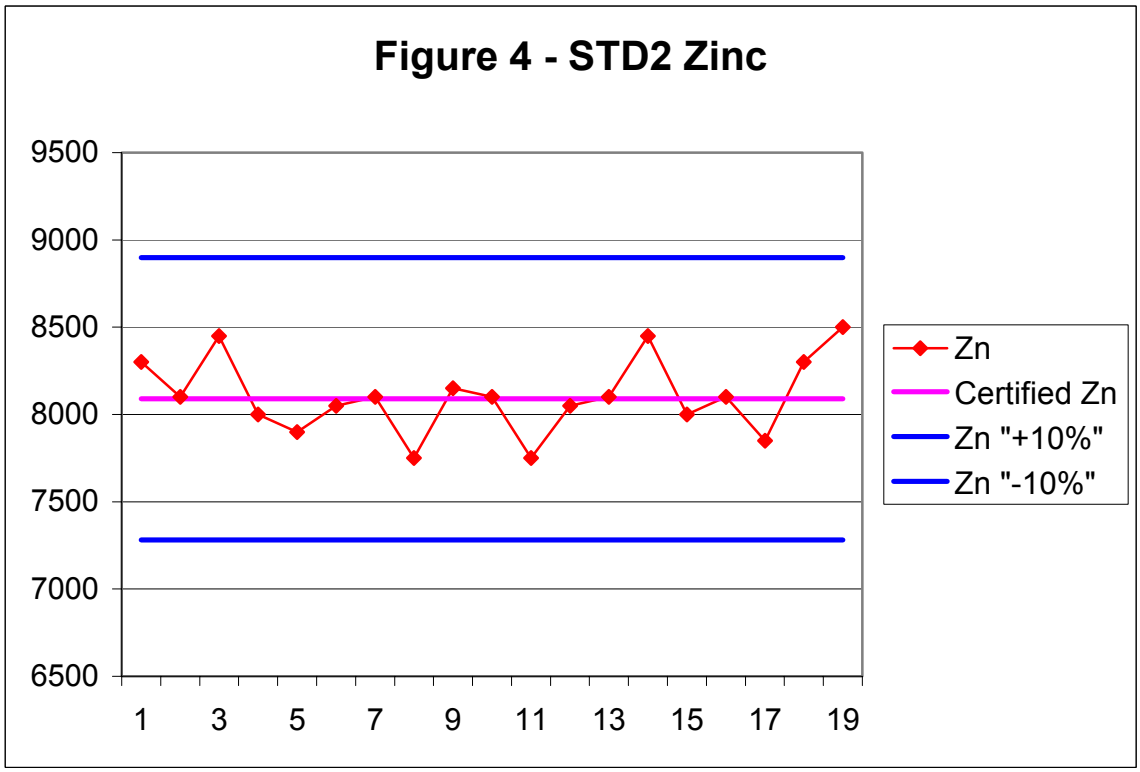


Figure 4 - STD2 Zinc
9500
9000
8500
8000
7500
7000
6500
1
3
5
7
9
11
13
15
17
19
Zn
Certified Zn
Zn "+10%"
Zn "-10%"

Appendix 4

Rock Sample Details and
Assay Results